

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for determining force exerted on a vehicle wheel, the vehicle wheel comprising a radius part between a hub and a radially outermost annular ground contacting part, the method comprising the steps of:

obtaining data on ~~functionality~~ a relationship between the force exerted on ~~[[a]]~~ the vehicle wheel and a physical parameter of the vehicle wheel at at least one predetermined measuring position;

making a formula of the physical parameter for the force, using the obtained data on the ~~functionality~~ relationship;

measuring the physical parameter of the vehicle wheel during rolling; and

computing the formula using the measured physical parameter to ~~work-out~~ calculate the force.

2. (Currently Amended) The method according to claim 1, wherein the force is at least one of a vertical force, a lateral force, a longitudinal force and a torque.

3. (Original) The method according to claim 1, wherein the radially outermost annular ground contacting part is a tire, and the radius part is a wheel disk of a wheel on which the tire is mounted.

4. (Original) The method according to claim 1, wherein the physical parameter is the magnitude of a radial strain in the radius part.

5. (Original) The method according to claim 1, wherein said at least one predetermined measuring position is a twelve-o'clock position (P3), three-o'clock position (P4), six-o'clock position (P1) and nine-o'clock position (P2) which are arranged at every 90 degrees around the rotational axis of the vehicle wheel.

6. (Original) The method according to claim 1, wherein the measuring of the physical parameter includes:

locating a sensor for the physical parameter which is fixed to the radius part; and
reading the sensor when the sensor is at said at least one predetermined measuring position.

7. (Original) The method according to claim 1, wherein the measuring of the physical parameter includes:

locating a plurality of sensors for the physical parameter which are fixed to the radius part; and

reading each said sensor when the sensor is at at least one of said at least one predetermined measuring position.

8. (Original) The method according to claim 1, wherein the measuring of the physical parameter includes:

locating a plurality of sensors for the physical parameter which are fixed to the radius part; and

reading each said sensor when the sensor is each of said at least one predetermined measuring position.

9. (Currently Amended) A device for determining force exerted on a vehicle wheel including a radially outermost annular ground contacting part, a hub and a radius part therebetween, the device comprising:

at least one sensor for measuring a physical parameter of the vehicle ~~wheel~~, wheel during rolling, said at least one sensor being attached to the radius part;

a memory ~~on~~ in which ~~data on functionality between the force and physical parameter are stored,~~ a formula of the physical parameter for the force is stored, the formula is made in advance using data on a relationship between the force exerted on the vehicle wheel and the physical parameter of the vehicle wheel at at least one predetermined measuring position;

a device for locating said at least one sensor in order to measure the physical parameter when the sensor is at the predetermined measuring position; and

a processor which, using data on the physical parameter read from said at least one sensor, computes the formula to calculate ~~and the stored data on functionality, works out~~ the force and ~~outputs~~ output data on the force.

10. (Currently Amended) ~~[[A]]~~ The device according to claim 9, wherein said physical parameter is the magnitude of radial strain on ~~[[a]]~~ the radius part of the vehicle wheel, wheel.

11. (Currently Amended) ~~[[A]]~~ The device according to claim 9, wherein said at least one sensor is one sensor fixed to ~~[[a]]~~ the radius part of the vehicle ~~wheel,~~ wheel.

12. (Currently Amended) ~~[[A]]~~ The device according to claim 9, wherein said at least one sensor is a plurality of sensors arranged around the rotational axis of the vehicle wheel and fixed to ~~[[a]]~~ the radius part of the vehicle wheel.

13. (Canceled)

14. (Currently Amended) ~~[[A]]~~ The device according to claim 9, wherein ~~the data stored on the memory include data on functionality between the physical parameter and~~ said force is at least one of a vertical force, a lateral force, a longitudinal force and a self-aligning torque.

15. (Currently Amended) A brake system including:
the device according to claim 9 to determine a breaking force during braking,
a braking mechanism for the vehicle ~~wheel~~, wheel; and
a controller for controlling the braking mechanism so that the breaking force
becomes a maximum during braking.